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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,168	09/29/2003	Marc J. Hildebrandt	KING-59C	1954

7590 01/27/2005

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EXAMINER	
GARBER, CHARLES D	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/674,168	HILDEBRANDT ET AL.	
	Examiner	Art Unit	
	Charles D. Garber	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) 3,6,9,11 and 14 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,2,4,5,7,8,10,12,13 and 15-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 29 September 2003 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/17/04, 9/15/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 2, 5, 8, 10 and13, drawn to refrigerated component with passive cooling and live spaces, classified in class 165, subclass 174.

II. Claims 3, 6, 9, 11 and 14, drawn to refrigerated component with passive cooling and dead spaces, classified in class 165, subclass 179.

III. Claims 12 and 15 are, drawn to viscometer with pin securing sample sleeves, classified in class 73, subclass 54.28.

Claims 1 and 16 are considered linking claims between the inventions of group I, II and III and will be examined with any of the elected inventions.

Claims 4, 7, 17 and 18 are considered generic claims and will be examined with any of the elected inventions.

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not include passive cooling moderation with live spaces such as in a Turbolator known in the art of heat exchangers for mixing to enhance heat exchange. The subcombination with dead

space has separate utility such as insulation to inhibit heat exchange to prevent thermal damage at inlet points.

Inventions I, II and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require pin. The subcombination with pin has separate utility such as preventing rotation and ensuring proper measurement by the viscometer rotating member.

During a telephone conversation with Christopher Rudy on 1/19/2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 2, 5, 8, 10, 13 as well as claims 1, 4, 7 and 16-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 3, 6, 9, 11, 14 and 15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

However, because depending claim 5 has not been found by the Examiner to be patentable based on the prior art Examiner must examine depending claims 8, 10 and 13 necessitating rejoinder of the inventions of group I and III which include the pin feature that was basis for distinctness between these groups.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites block is a "rectangularly shaped cube". Examiner cannot determine if claim intends block to be a cube or more broadly cubic structure. For purposes of further examination Examiner will assume block is a cubic not necessarily having all equal sides.

Depending claim 13 is indefinite for the same reason.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Stokes et al. (US Patent 5,167,275).

Regarding claims 1 and 16, Stokes discloses a heat exchanger which is a manufactured article which is directly refrigerated including a refrigerating pathway 30 within heat exchange tube 12 provided with passive cooling moderation by turbulator structure 24.

As for claim 2, the passages 38 and 30 are moderating live spaces with at least two cascade points provided at the ends of the turbulator.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4, 5, 7, 8, 10, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hildebrandt et al. (US Patent 6,786,081) in view of Stokes et al. (US Patent 5,167,275).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR

1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claims 4, 5, 17 and 18, Hildebrandt discloses rotational viscometric testing in a system having refrigerent pathways (see ABSTRACT) for testing oils (column 1 lines 14-32).

The reference though lacks passive cooling moderation.

Stokes discloses a heat exchanger which is a manufactured article which is directly refrigerated including a refrigerating pathway 30 within heat exchange tube 12 also teaching passive cooling moderation by turbulator structure 24.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide passive cooling moderation such as with an insert "for increasing the heat transfer capacity of a heat transfer tube" and thereby improving the efficiency of the heat exchanger.

As for claims 7, 8, Hildebrandt further discloses a block made of a thermally conducting material; and in said block: a plurality of vertically oriented wells into each of which can be placed a sample sleeve; a plurality of sample sleeves, each of which is

placed into one of said wells, and each of which can receive the oleaginous fluid and a rotor; a heater; a temperature-sensing probe; and a refrigerant pathway, in which is positioned the passive cooling moderator. (see figures, ABSTRACT and SUMMARY WITH INTRODUCTORY DETAIL OF THE INVENTION)

Claim 15 is considered to be substantively the same as claim 8 as discussed above.

As for claim 10, Hildebrandt discloses item 100 which is a rectangularly shaped block. Figures 51A through 56 show refrigerant pathway 130 embraces a plurality of refrigerant pathways. As discussed above, Stokes taught the advantageous use of an insert within heat exchanger passages to passively increase heat transfer. Figures 24 and 25 shown heater spaces 143 and 145 which are a plurality of heaters inserted into said block horizontally, though, the heater 141 is shown inserted horizontally rather than vertically. However, Figures 80, 81A and 87I show an embodiment where the temperature-sensing probe embraces at least one such probe inserted vertically. It would have been obvious to one having ordinary skill in the art at the time the invention was made to insert a temperature probe vertically where samples have greater depth with respect to width. In this manner it may be possible to monitor the uniformity of the temperature of an individual sample with only a single probe by varying the depth of insertion.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hildebrandt et al. (US Patent 6,786,081) as modified by Stokes et al. (US Patent

5,167,275) and applied to claim 7 and 10 above and further in view of Sayers et al. (US Patent 5,604,300).

The references lack the sample sleeve is stopped from rotating in the well in which it is placed through a pin and pin-engaging hole or slot arrangement.

Sayers teaches "The vessel 8 is shown in FIGS. 2 and 3 as a sample cup of conventional type. Pins 20 extend from the bottom of the cup 8 to fit into holes defined in the upper surface of the base 16 so that the cup 8 does not rotate during a test."

It would have been obvious to one having ordinary skill in the art at the time the invention was made to secure a sample holder in a rotating viscometer using a pin in a hole or slot in order to prevent rotation of the sample holder and thereby ensure the accuracy of the reading.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eisenlohr (US Patent 2,318,206), Cadars (US Patent 4,534,409), Duncan (US Patent 4,272,907), Holl (US Patent 4,784,218) and Gorman (US Patent 4,993,485) provide other prior art examples of heat exchanger passage inserts used for passive heat transfer moderation.

Sekiguchi et al. (US Patent 5,821,407) provides another prior art example of rotational viscometer with heated block holding sample.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg

CHARLES GARBER
PRIMARY EXAMINER